Applying method #6

Some additional aspects

Bojan NASTAV
Contents

• Hidden security assets in BOP
• Case study – European Commission (2019)
• Data sources
• Additional literature
Hidden security assets in BOP

- Bank of France identifies hidden securities assets in the BoP

*Source: Gervais and Quang (2018)*
Hidden security assets in BOP

- Financial assets are well collected except for the part that is owned by households in offshore centres

*Differences between nationally-compiled liabilities and liabilities derived from counterparts assets*

*Source: Gervais an Quang (2018).*
Hidden security assets in BOP

• Caution using the methodology for statistical purposes!
  • Adjustments to methodologies prior to use in statistical compilation
  • Data limitation -> short time series
  • Single source for inconsistencies?

• Solution?
  • Sharing data – safely and in line with considerations of official statistics
Case study

• Estimating International Tax Evasion by Individuals (European Commission, 2019)

https://op.europa.eu/en/publication-detail/-/publication/10854d45-f549-11e9-8c1f-01aa75ed71a1
Case study

• Data Used for Estimating Offshore Wealth

\[ \text{off } FinW_{G,t} = \text{off } PFW_{G,t} + \text{Deposits}_{G,t} \]

• Data on international portfolio securities
  • IMF Coordinated Portfolio Investment Survey (CPIS)
  • IMF International Investment Position (IIP)
  • External Wealth of Nations Mark II database (EWN)

• Limitations: coverage and/or bilateral data does not exist (rather, ROW)
# Case study

## Table 18. Examples of Data Availability on Assets in IIP, CPIS and EWN

<table>
<thead>
<tr>
<th></th>
<th>Situation 1: the 3 databases are consistent</th>
<th>Situation 2: IIP, CPIS and EWN are inconsistent</th>
<th>Situation 3: only IIP is available (and reported in EWN)</th>
<th>Situation 4: only CPIS is available</th>
<th>Situation 5: only EWN is available</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Denmark</td>
<td>UK</td>
<td>Morocco</td>
<td>The Bahamas</td>
<td>United Arab Emirates</td>
</tr>
<tr>
<td><strong>IIP</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Portfolio Investment Assets</td>
<td>251,885</td>
<td>3,318,834</td>
<td>178</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Equity and Investment Fund Shares</td>
<td>132,047</td>
<td>1,653,362</td>
<td>171</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Debt securities</td>
<td>119,838</td>
<td>1,665,472</td>
<td>8</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>CPIS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Portfolio Investment Assets</td>
<td>251,884</td>
<td>3,140,509</td>
<td>N/A</td>
<td>19,678</td>
<td>N/A</td>
</tr>
<tr>
<td>Equity and Investment Fund Shares</td>
<td>132,046</td>
<td>1,366,482</td>
<td>N/A</td>
<td>1,067</td>
<td>N/A</td>
</tr>
<tr>
<td>Debt securities</td>
<td>119,838</td>
<td>1,774,028</td>
<td>N/A</td>
<td>18,611</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>EWN</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assets</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equity and Investment Fund Shares</td>
<td>132,047</td>
<td>1,490,828</td>
<td>171</td>
<td>1,067</td>
<td>302,761</td>
</tr>
<tr>
<td>Debt (incl. debt securities + other debt)</td>
<td>277,808</td>
<td>7,314,943</td>
<td>14,092</td>
<td>397,986</td>
<td>181,669</td>
</tr>
<tr>
<td>Of which debt securities</td>
<td>119,838</td>
<td>1,564,036</td>
<td>8</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Note: 2006, end of period, current millions of US$. 
Case study

• Data corrections to assess the global portfolio assets and liabilities

\[
offPFW_{g,t} = \sum_i IPFliabilities_{i,t} - \sum_i IPFassets_{i,t}
\]

• Supplement CPIS data with IIP and EWN

• Corrective strategies for missing years / countries
  • Netherlands’ Special Financial Institutions sector
  • Cayman mutual fund sector – share of US securities in the portfolio of the Cayman Islands is estimated using a gravity model

• …

\[
\log(1 + A_{i,t,t}) = \phi_i + \theta_t + \beta Z_{i,t} + \gamma X_{i,t} + \epsilon_{i,t,t}
\]
Table 11. Portfolio Assets Estimates (Billions of US$)

<table>
<thead>
<tr>
<th>Year</th>
<th>Raw CPIs assets</th>
<th>Correction for CPIS reporting countries</th>
<th>Correction for non-CPIS reporting countries</th>
<th>Total securities assets</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Missing years</td>
<td>Netherlands correction</td>
<td>Cayman Islands non-bank sector</td>
</tr>
<tr>
<td>2001</td>
<td>12,718</td>
<td>12</td>
<td>24</td>
<td>182</td>
</tr>
<tr>
<td>2002</td>
<td>14,148</td>
<td>28</td>
<td>19</td>
<td>227</td>
</tr>
<tr>
<td>2003</td>
<td>19,221</td>
<td>21</td>
<td>3</td>
<td>346</td>
</tr>
<tr>
<td>2004</td>
<td>23,489</td>
<td>2</td>
<td>14</td>
<td>533</td>
</tr>
<tr>
<td>2005</td>
<td>25,032</td>
<td>2</td>
<td>0</td>
<td>584</td>
</tr>
<tr>
<td>2006</td>
<td>33,162</td>
<td>0</td>
<td>5</td>
<td>871</td>
</tr>
<tr>
<td>2007</td>
<td>39,304</td>
<td>0</td>
<td>3</td>
<td>1,186</td>
</tr>
<tr>
<td>2008</td>
<td>31,041</td>
<td>0</td>
<td>0</td>
<td>990</td>
</tr>
<tr>
<td>2009</td>
<td>37,523</td>
<td>0</td>
<td>2</td>
<td>1,086</td>
</tr>
<tr>
<td>2010</td>
<td>40,604</td>
<td>0</td>
<td>2</td>
<td>1,219</td>
</tr>
<tr>
<td>2011</td>
<td>39,359</td>
<td>0</td>
<td>2</td>
<td>1,478</td>
</tr>
<tr>
<td>2012</td>
<td>43,630</td>
<td>0</td>
<td>3</td>
<td>1,598</td>
</tr>
<tr>
<td>2013</td>
<td>47,768</td>
<td>0</td>
<td>0</td>
<td>1,873</td>
</tr>
<tr>
<td>2014</td>
<td>48,683</td>
<td>0</td>
<td>0</td>
<td>2,047</td>
</tr>
<tr>
<td>2015</td>
<td>49,731</td>
<td>18</td>
<td>0</td>
<td>378</td>
</tr>
<tr>
<td>2016</td>
<td>51,469</td>
<td>67</td>
<td>1</td>
<td>480</td>
</tr>
</tbody>
</table>

No of countries included in the estimations or correction: 72

Notes on the estimation strategies:
- Use of CPIS database
- Extrapolation with ratio
- Comparison with the IIP published by the DNB
- Estimation using the US securities held by Cayman Islands (TIC data) and gravity model
- Estimation using the US securities held by China (TIC data), IIP of China and reserves published in IFS
- Estimation using the US securities held by MEO (TIC data) and reserves published in IFS
- Use of EWN estimates, extrapolations when no portfolio asset debt estimates, and IIP and extrapolation ratio for 2015 and 2016

Extrapolation for 2015-2016; IIP for 68 countries and CPIS ratio for 64 countries: 213
## Table 12. Portfolio Liabilities Estimates (Billions of US$)

<table>
<thead>
<tr>
<th></th>
<th>EWN liabilities</th>
<th>IIP liabilities (not included in EWN)</th>
<th>Correction to EWN data</th>
<th>raw CPIS derived liabilities &gt; reported liabilities</th>
<th>Non EWN countries</th>
<th>Other Small Financial Centres (Incl. Cayman Islands)</th>
<th>International organisations</th>
<th>Total securities liabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>No debt data</td>
<td>Missing Years</td>
<td>Netherlands corrections</td>
<td>CPIS derived liabilities</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2001</td>
<td>14,590</td>
<td>1</td>
<td>439</td>
<td>0</td>
<td>265</td>
<td>246</td>
<td>1</td>
<td>163</td>
</tr>
<tr>
<td>2002</td>
<td>15,925</td>
<td>0</td>
<td>555</td>
<td>0</td>
<td>326</td>
<td>192</td>
<td>1</td>
<td>155</td>
</tr>
<tr>
<td>2003</td>
<td>21,425</td>
<td>0</td>
<td>720</td>
<td>0</td>
<td>18</td>
<td>274</td>
<td>1</td>
<td>199</td>
</tr>
<tr>
<td>2004</td>
<td>26,458</td>
<td>0</td>
<td>914</td>
<td>0</td>
<td>0</td>
<td>252</td>
<td>3</td>
<td>214</td>
</tr>
<tr>
<td>2005</td>
<td>29,525</td>
<td>0</td>
<td>1,015</td>
<td>0</td>
<td>0</td>
<td>431</td>
<td>3</td>
<td>255</td>
</tr>
<tr>
<td>2006</td>
<td>37,187</td>
<td>0</td>
<td>1,309</td>
<td>0</td>
<td>0</td>
<td>451</td>
<td>3</td>
<td>266</td>
</tr>
<tr>
<td>2007</td>
<td>45,059</td>
<td>0</td>
<td>1,601</td>
<td>0</td>
<td>0</td>
<td>453</td>
<td>5</td>
<td>309</td>
</tr>
<tr>
<td>2008</td>
<td>36,370</td>
<td>0</td>
<td>1,218</td>
<td>0</td>
<td>0</td>
<td>264</td>
<td>2</td>
<td>272</td>
</tr>
<tr>
<td>2009</td>
<td>43,801</td>
<td>7</td>
<td>1,241</td>
<td>0</td>
<td>0</td>
<td>261</td>
<td>3</td>
<td>255</td>
</tr>
<tr>
<td>2010</td>
<td>46,812</td>
<td>8</td>
<td>1,253</td>
<td>0</td>
<td>5</td>
<td>497</td>
<td>3</td>
<td>313</td>
</tr>
<tr>
<td>2011</td>
<td>46,737</td>
<td>11</td>
<td>1,169</td>
<td>0</td>
<td>5</td>
<td>654</td>
<td>3</td>
<td>280</td>
</tr>
<tr>
<td>2012</td>
<td>52,231</td>
<td>13</td>
<td>1,231</td>
<td>0</td>
<td>18</td>
<td>882</td>
<td>3</td>
<td>254</td>
</tr>
<tr>
<td>2013</td>
<td>56,978</td>
<td>20</td>
<td>1,210</td>
<td>0</td>
<td>15</td>
<td>1,334</td>
<td>4</td>
<td>309</td>
</tr>
<tr>
<td>2014</td>
<td>58,765</td>
<td>29</td>
<td>992</td>
<td>0</td>
<td>75</td>
<td>1,514</td>
<td>7</td>
<td>294</td>
</tr>
<tr>
<td>2015</td>
<td>54,012</td>
<td>4,059</td>
<td>1</td>
<td>2098</td>
<td>20</td>
<td>2,472</td>
<td>7</td>
<td>343</td>
</tr>
<tr>
<td>2016</td>
<td>54,551</td>
<td>4,269</td>
<td>2</td>
<td>2,098</td>
<td>7</td>
<td>343</td>
<td>7</td>
<td>343</td>
</tr>
</tbody>
</table>

### Notes on the estimation strategies

- **Use of EWN values**: Use of last IIP report to update EWN and complete for 2015 and 2016.

- **Use of CPIS-derived liabilities to complete portfolio debt data**: Use of CPIS-derived liabilities.

- **Comparison with the IIP published by the DNB**: Use of CPIS-derived liabilities and taking the maximum.

- **Estimation from the SEFEER-derived equity liabilities and the data on international debt from the BIS**: Use of CPIS-derived liabilities and taking the maximum.
Case study

• Breakdown by country of ownership
  • Adjustments made using outgoing FDI/GDP to account for individuals/entities
  • Larger FDI -> more corporate deposits
  • Outgoing cross-border deposits

\[ d_{i,t} = w_{i,t} \times d_{i,t}^{bis} \]

\[ w_{i,t} = \frac{3 \cdot gdp_{i,t}}{2 \cdot \sum gdp_{i,t}} + \frac{1}{2} \frac{fdi_{i,t}}{\sum fdi_{i,t}} \]

\[ w_{i,t} = \frac{gdp_{i,t}}{\sum gdp_{i,t}} + \frac{fdi_{i,t}}{\sum fdi_{i,t}} \]
Case study

• Rates of return on capital
  • Rates of return on portfolio securities calculated from data on 14,000 mutual funds
  • Vs. MSCI World Index
Case study

Figure 6. Estimated Global Offshore Wealth (Billions of US$)
<table>
<thead>
<tr>
<th>Database</th>
<th>Source</th>
<th>Description</th>
<th>Step in the methodology</th>
<th>Use in the methodology</th>
<th>Limitations</th>
<th>Statistics of Interest</th>
<th>Metadata</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coordinated Portfolio Investment Survey (CPIS)</td>
<td>IMF statistics [source: <a href="http://data.imf.org/40/LAC/3c/sexper/591804546987859034525820">http://data.imf.org/40/LAC/3c/sexper/591804546987859034525820</a>]</td>
<td>General information: Data on bilateral international portfolio asset positions; Voluntary data collection; Augmented by SSI0 and SEFFER; IMF derives aggregate portfolio liabilities for all economies (reporters and non-reporters). Coverage: Period: 2001 - 2016; Participating countries: 91; Frequency: Between 2001-2011: annual report at the end of December. From 2012: biannual report encouraged.</td>
<td>Main source for portfolio investment asset; use of aggregated data by country (equity and debt); Use of bilateral data for estimation of gravity model; Derived liability to complete data for portfolio investment liabilities (for some small countries and for equity liabilities of international organizations); Marginal uses to compute ratio to extrapolate from other incomplete databases (e.g., SFI comments for 2013/2014).</td>
<td>Not all countries are reporting or reported for each year (only 61 countries reported each year between 2001 and 2016). Surveys only on portfolio assets; liabilities are only derived from the reported asset.</td>
<td>Aggregate portfolio investment assets by countries; Bilateral portfolio investment assets; Derived portfolio investment liabilities; Portfolio reserves (SSI0 and SEFFER).</td>
<td>Available metadata by country (but not for all countries).</td>
<td></td>
</tr>
<tr>
<td>The External Wealth of Nations database (EWN)</td>
<td>Lane and Milesi-Ferretti (2007) [source: <a href="http://www.repec.org/EP/ew/ew.htm">http://www.repec.org/EP/ew/ew.htm</a>]</td>
<td>General information: Extent of the IIP by country; Use of AES data to extend IIP as well as other estimation techniques to cover more countries; Data on international portfolio investment, direct investment, other investments, and reserves. Coverage: Period: 1970 - 2014; Number of covered countries: 215; Frequency: End-of-year values.</td>
<td>Main source for portfolio investment liabilities; Complementary source for portfolio investment assets; Marginal use to complete data (e.g., reserves for Iran and GBP of some countries for gravity model).</td>
<td>No update after 2014; Not only raw data but estimates; When countries are not reporting their IIP to the IMF, no breakdown between portfolio debt and other debts; For some small countries and TFCs, data are not necessarily reliable.</td>
<td>Portfolio equity assets and liabilities; Portfolio debt assets and liabilities; FX Reserves minus gold: GDP.</td>
<td>Available metadata by country to explain the estimation techniques for each variable.</td>
<td></td>
</tr>
</tbody>
</table>
## Case study

### International Investment Positions (IIP)
- **Data source:** Various, including BIS, national statistics, and other sources.
- **Coverage:** Annual, with some exceptions.

### Switzerland
- **IIP Statistics:** Source: [BIS website](https://www.bis.org/statFact/statFact.htm)
- **Access:** Online, downloadable in Excel or CSV files.
- **Data:** Detailed information on balance of payments, including international investment positions.

### Netherlands
- **IIP Statistics:** Source: [BIS website](https://www.bis.org/statFact/statFact.htm)
- **Access:** Online, downloadable in Excel or CSV files.
- **Data:** Comprehensive data on foreign assets and liabilities held by residents and non-residents.

### Other Countries
- **IIP Statistics:** Source: National statistical offices or central banks.
- **Access:** Online, downloadable in Excel or CSV files.
- **Data:** Detailed information on balance of payments, including international investment positions.

### Data Sources
- **Ownership and control:** International investment positions by country and industry.
- **Data availability:** Recent years, with some historical data.

### Methodology
- **Data compilation:** Based on national sources and international agreements.
- **Data quality:** Varies by country and data source.

### Case Study Details
- **Focus:** Analysis of international investment positions in selected countries.
- **Objectives:** To understand the composition of foreign assets and liabilities, and their implications for the economy.

### Conclusion
- **Implications:** International investment positions can influence economic stability and financial market stability.
- **Policy recommendations:** Strengthening international cooperation in data collection and dissemination.

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### Additional Information
- **BIS and OECD:** Collaborative efforts to improve the standardization of balance of payments statistics.
- **International Financial Statistics (IFS):** Source: [BIS website](https://www.bis.org/statFact/statFact.htm)
- **Access:** Online, downloadable in Excel or CSV files.

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### Further Reading
- [BIS International Financial Statistics](https://www.bis.org/statFact/statFact.htm)
- [OECD International Investment Outlook](https://www.oecd.org/dataoecd/66/46/46591811.pdf)
Data

• Data (un)availability is key
• Granular data from Central Bank
• International data sources
  • Official statistics
  • Unofficial statistics
  • Investigative journalist data
Data

- BIS Locational banking statistics: [https://www.bis.org/statistics/bankstats.htm](https://www.bis.org/statistics/bankstats.htm)
Data

• TJN Financial Secrecy Index: https://fsi.taxjustice.net/en/
• Openlux: https://www.occrp.org/en/openlux/
• ICIJ: https://offshoreleaks.icij.org/
• FinCEN: https://www.icij.org/investigations/fincen-files/explore-the-fincen-files-data/
• Aleph: https://docs.alephdata.org/how-aleph-is-used
Additional literature


https://stats.unctad.org/iiffs